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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARTIN PFLEIDERER, YANIK S. TARDY, and
BLAISE LOVISA

Appeal 2019-001757
Application 14/867,646
Technology Center 3700

Before PHILLIP J. KAUFFMAN, JEREMY M. PLENZLER, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

KAUFFMAN, *Administrative Patent Judge*.

DECISION ON APPEAL
STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–10 and 12–19. Final Act. 3–9. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as DePuy Synthes Products. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Appellant's claimed invention relates to the transnasal delivery (via the sphenoidal sinus) of low level light to the substantia nigra, as a treatment or prevention for Parkinson's disease. Spec. ¶ 1. Claims 1 and 18 are independent. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A transnasal delivery method for treating or preventing Parkinson's disease using photobiomodulation, comprising the steps of:

providing an optical system including a light source and an optical fiber;

positioning within a nasal cavity a distal end of the optical fiber; and

activating the light source to irradiate substantia nigra brain tissue with an effective amount of light in the treatment or prevention of Parkinson's disease,

wherein a cribriform plate of the brain is not irradiated with light nor does the irradiated light pass across the cribriform plate.

REJECTIONS

I. Claims 1–10, 13, 14, 18, and 19² are rejected under 35 U.S.C. § 103 as unpatentable over Lim and DiMauro.³ Final Act. 3–8.

II. Claim 12 is rejected under 35 U.S.C. § 103 as unpatentable over Lim, DiMauro, and Makower.⁴ Final Act. 8.

III. Claims 15–17 are rejected under 35 U.S.C. § 103 as unpatentable over Lim, DiMauro, and Toselli.⁵ Final Act. 9.

ISSUE

The claims and grounds are argued so that there is one issue before us on appeal. In the proposed combination, Lim's device is inserted through the nasal cavity and an opening of the sphenoidal sinus, as disclosed by DiMauro. Final Act. 4. Appellant contends that such a method would not have been obvious because inserting a catheter through the opening of the sphenoidal sinus is an invasion of nasal tissue and Lim teaches away from

² Although the Examiner omits claim 19 from the heading (Final Act. 3), the Examiner addresses claim 19 in the body of the rejection (Final Act. 8), and claim 19 is listed as rejected on the Office Summary Action (PTOL-326). Appellant acknowledges that claim 19 was rejected. *See* Appeal Br. 5.

³ Lim (US 2014/0358199 A1; published Dec. 4, 2014); DiMauro (US 2006/0287695 A1, published Dec. 21, 2006).

⁴ Makower (US 2010/0100181 A1, published Apr. 22, 2010).

⁵ Toselli (US 2009/0222067 A1, published Sept. 3, 2009).

invasion of nasal tissue. Appeal Br. 6–7. For the reasons that follow, we disagree with Appellant’s contention.

ANALYSIS

The Examiner correctly finds that Lim teaches delivering low level light having a wavelength between 600 nm and 690 nm to the substantia nigra portion of the brain as a treatment for Parkinson’s disease. Final Act. 3, citing Lim ¶ 115; Final Act. 4, citing Lim ¶¶ 145, 173; *see also* Lim ¶ 125, Fig. 10. The Examiner also correctly finds that DiMauro describes the sphenoidal sinus as lying adjacent to important structures of the brain, and teaches delivering red light transnasally from an end of a fiber optic cable positioned in the sphenoidal sinus to the brain as a treatment mechanism. Final Act. 4, citing DiMauro ¶¶ 29, 88; *see also* DiMauro ¶ 91 (describing the sphenoidal sinus as being just below, and slightly anterior to, the hypothalamus); ¶ 94 (describing a method in which the posterior end of a fiber optic cable is guided fluoroscopically *through an opening* between the nasal cavity and the sphenoidal sinus, and into the sinus, to facilitate the delivery of light to the hypothalamus); ¶ 28 (describing Figure 7); Fig. 7. The Examiner correctly concludes that it would have been obvious

to modify Lim’s method of treating Parkinson’s disease by inserting a fiber optic instrument into [the] sphenoidal sinus as taught by DiMauro and targeting the irradiation of light towards [the substantia nigra] of the brain for treating Parkinson’s disease instead of facing towards the cribriform plate.

Final Act. 4.

It is undisputed that Lim’s preferred method is “non-invasive.” Lim ¶ 191; Appeal Br. 6–7 (citing Lim ¶ 4). Indeed, as Appellant points out, Lim repeatedly emphasizes that, “[t]here is no invasion into the body tissue.” The dispute lies in what is meant by “invasive.”

The Examiner finds that the ordinary meaning of an “invasive diagnostic technique” involves “entry into the living body by incision of an instrument.” Ans. 6–7 (emphasis omitted). In accordance with the teachings of DiMauro, the end of the fiber optic cable is inserted into the sphenoidal sinus through a natural opening and not through an incision or other parting of tissue. Ans. 3–5 (citing DiMauro ¶ 94). Thus, Lim’s method, as modified in view of the teachings of DiMauro, is, in the conventional sense of the term, not invasive.

Appellant contends that Lim uses the terms “invasion” unconventionally to mean insertion beyond the nasal cavity or space of the nostril. Appeal. Br. 6; Reply Br. 2.

We have reviewed each of the portions of Lim cited by Appellant. *See* Appeal Br. 4–7. Although these portions may describe Lim’s light energy source as remaining within the nasal cavity space, i.e., not passing beyond the nasal cavity, these portions disclose that Lim’s application of light energy does not require any incision, in accordance with the Examiner’s definition of “invasive.” Moreover, Appellant has not identified a passage in which Lim refers to a method in which the fiber optic cable is extended into a sinus as “invasive.” Nor has Appellant provided a

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persuasive reason for interpreting “invasive,” as described by Lim, in other than the conventional sense. For these reasons, DiMauro’s technique of passing a fiber optic cable through an opening between the nasal cavity and the sphenoidal sinus is not an invasive procedure, and thus Lim’s preference for a non-invasive application of light energy does not teach away from DiMauro’s technique.

Consequently, we sustain the rejection of claims 1–3, 6–10, 13, and 18 under 35 U.S.C. § 103 as unpatentable over Lim and DiMauro. Although Appellant argues the patentability of claims 4, 5, 14, and 19 under a separate subheading (Appeal Br. 7–11), Appellant’s contentions regarding these claims are essentially the same as Appellant’s contentions regarding the patentability of claim 1. Therefore, we also sustain the rejection of claims 4, 5, 14, and 19 under 35 U.S.C. § 103 as unpatentable over Lim and DiMauro. Appellant does not address ground II, and contends, for ground III, that claims 16 and 17 are patentable over the teachings of Lim, DiMauro, and Toselli only on the basis that Toselli fails to remedy perceived deficiencies in the combined teachings of Lim and DiMauro as applied to independent claim 1. As such, we sustain the rejections of claim 12 and claims 15–17 as well.

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CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–10, 13, 14, 18, 19	103	Lim, DiMauro	1–10, 13, 14, 18, 19	
12	103	Lim, DiMauro, Makower	12	
15–17	103	Lim, DiMauro, Toselli	15–17	
Overall Outcome			1–10, 13, 14, 18, 19	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED